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Part 2



INTEGRATED INFORMATION SUPPORT SYSTEM (IISS)
Volume III - Configuration Management
Part 2 - System Administrator's Guide

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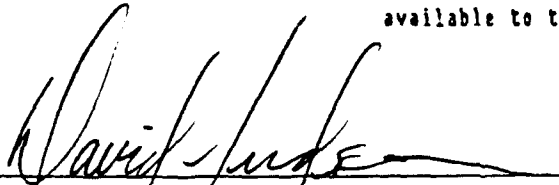
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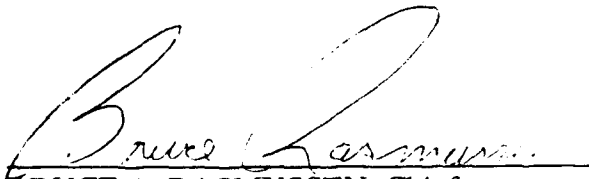
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FOREWORD

This technical report covers work performed under Air Force Contract F33600-87-C-0464, DAPro Project. This contract is sponsored by the Manufacturing Technology Directorate, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Bruce A. Rasmussen, Branch Chief, Integration Technology Division, Manufacturing Technology Directorate, through Mr. David L. Judson, Project Manager. The Prime Contractor was Integration Technology Services, Software Programs Division, of the Control Data Corporation, Dayton, Ohio, under the direction of Mr. W. A. Osborne. The DAPro Project Manager for Control Data Corporation was Mr. Jimmy P. Maxwell.

The DAPro project was created to continue the development, test, and demonstration of the Integrated Information Support System (IISS). The IISS technology work comprises enhancements to IISS software and the establishment and operation of IISS test bed hardware and communications for developers and users.

The following list names the Control Data Corporation subcontractors and their contributing activities:

| <u>SUBCONTRACTOR</u> | <u>ROLE</u> |
|--------------------------|--|
| Control Data Corporation | Responsible for the overall Common Data Model design development and implementation, IISS integration and test, and technology transfer of IISS. |
| D. Appleton Company | Responsible for providing software information services for the Common Data Model and IDEF1X integration methodology. |
| ONTEK | Responsible for defining and testing a representative integrated system base in Artificial Intelligence techniques to establish fitness for use. |
| Simpact Corporation | Responsible for Communication development. |

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Structural Dynamics
Research Corporation

Responsible for User Interfaces,
Virtual Terminal Interface, and Network
Transaction Manager design,
development, implementation, and
support.

Arizona State University

Responsible for test bed operations
and support.

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SECTION 1

ADMINISTRATOR'S GUIDE

There are many functions performed by the Test Bed System Administrator. These functions include creating new user accounts, assigning privileges and quotas, tape processing procedures, backup procedures, and ORACLE database procedures. These will be discussed in the following sections.

Step 1. Adding New Accounts

There are four basic types of accounts that can be set up on the test bed. They are IISS development and integration, individual development, interested observers, and general access. When creating new accounts, it is necessary to evaluate the request and determine into which category the account will fall.

- a. IISS development and integration account is used by authorized members within a sub-contractor group. Current IISS subsystem development and integration with other subsystems is done here. Files such as data, command, and form files will reside in this account. Only executables for the particular development subsystem will reside here; all other executables for the other subsystems reside in the production IISS (PIISS) area and IISS will point to them in that location.
 - 1) Privileges and quotas - This type of account requires the privileges TMPMBX, NETMBX, and GRPNAM. The approximate disk quota required for file storage and IISS development is 50,000 blocks. The following are quotas which should be set when the account is created:

| | | |
|------------|----------------|------------------|
| PRI0: 4 | BYTLM: 99000 | BIOLM: 12 |
| PRCLM: 32 | PBYTLM: 0 | DIOLM: 12 |
| ASTLM: 10 | WSDEFAULT: 200 | FILLM: 120 |
| ENQLM: 300 | WSQUOTA: 768 | SHRFILLM: 0 |
| TQELM: 30 | WSEXTENT: 2048 | CPU: NO LIMIT |
| MAXJOBS: 0 | MAXACCTJOBS: 0 | PGFLQUOTA: 50000 |
 - 2) Unless specifically requested, these accounts do not require WPS-PLUS, word processing, privileges.
 - 3) Unless specifically requested, these accounts do not require Documentation Management privileges.
 - 4) Because of the development status of these accounts, they should be set up with Configuration Management privileges. Many CM

activities will take place directly from this account, such as checking out and returning files.

NOTE: Because of Group assignments and mailbox handling, it is recommended that only one IISS development/integration account be created within a group.

- b. Individual development accounts are used by individuals contributing to the subsystem for which their sub-contractor group is responsible. Source and link files, as well as other development files may be located here. However, any files developed in this account should be moved to the main integration test area for the sub-system for thorough testing.

- 1) Privileges and quotas - This type of account requires the privileges TMPMBX and NETMBX. The approximate disk quota required for this type of account is 10000 blocks. Additional disk quota may be required in this type of account, based on the level of activity taking place here. The following are quotas which should be set when the account is created:

| | | |
|------------|----------------|------------------|
| PRI0: 4 | BYTLM: 8192 | BIOLM: 6 |
| PRCLM: 10 | PBYTLM: 0 | DIOIM: 6 |
| ASTLM: 10 | WSDEFAULT: 200 | FILLM: 30 |
| ENQLM: 200 | WSQUOTA: 768 | SHRFILLM: 0 |
| TQELM: 10 | WSEXTENT: 2048 | CPU: NO LIMIT |
| MAXJOBS: 0 | MAXACCTJOBS: 0 | PGFLQUOTA: 10000 |

- 2) Unless specifically requested, these accounts do not require WPS-PLUS, word processing, privileges.
- 3) Unless specifically requested, these accounts do not require Documentation Management privileges.
- 4) Because of the development status of these accounts, they should be set up with Configuration Management privileges. CM activities will take place directly from this account, such as checking out and returning files.

- c. Interested observers are accounts for individuals who wish to be kept informed of activities on the test bed. For the most part, activity in these accounts is limited to receiving and sending messages via the VAX MAIL facility.

- 1) Privileges and quotas - This type of account requires the privileges TMPMBX and NETMBX. The approximate disk quota required for this type of

account is 10000 blocks. The following are quotas which should be set when the account is created:

| | | |
|------------|----------------|------------------|
| PRI0: 4 | BYTLM: 8192 | BIOLM: 6 |
| PRCLM: 10 | PBYTLM: 0 | DIOLM: 6 |
| ASTLM: 10 | WSDEFAULT: 200 | FILLM: 30 |
| ENQLM: 200 | WSQUOTA: 768 | SHRFILLM: 0 |
| TQELM: 10 | WSEXTENT: 2048 | CPU: NO LIMIT |
| MAXJOBS: 0 | MAXACCTJOBS: 0 | PGFLQUOTA: 10000 |

- 2) Unless specifically requested, these accounts do not require WPS-PLUS, word-processing, privileges.
 - 3) Unless specifically requested, these accounts do not require Documentation Management privileges.
 - 4) Unless specifically requested, these accounts do not require Configuration Management privileges.
- d. General access accounts are created for loading software packages onto the test bed, such as IDSS and MCMC. Due to the nature of the account, it is very difficult to set standards for their creation.
- 1) Privileges and quotas - Dependent upon the software to be loaded.
 - 2) These accounts do not require WPS-PLUS, word-processing, privileges.
 - 3) These accounts do not require Documentation Management privileges.
 - 4) These accounts do not require Configuration Management privileges.

Step 2. Tape Procedures

- a. Procedures for loading tapes onto the test bed have been created. Use the form on the following page when there is a need to load files onto the AF VAX. Fill in all information and submit the form, via mail, to the SYSTEM account, the account used for Operation requests. NOTE: Please number the tape and refer to this tape number in the form when notifying Operations. If a corresponding form has not been received by Operations when a tape is received, the tape will not be loaded.

The following is an explanation of the input necessary on the form:

- (1) Enter the tape number which corresponds to the actual number on the tape sent to Operations.
- (2) Enter date of request for tape load.
- (3) Enter name of sub-contracting company making request.
- (4) Enter name of person making request.
- (5) Enter telephone number of requestor.
- (6) Enter the name of the account on the AF VAX which is to receive the files from the tape, including disk name (e.g., IISS DVLP:[GARV]).
- (7) Enter the full command used to create this tape.
- (8) Enter the total amount of disk space required to load tape.

NOTE: Be sure account has sufficient disk quota available before this request is made.

TAPE INFORMATION REQUIRED FOR LOADING
A TAPE ON THE AF VAX

REQUEST:

-
- (1) TAPE NUMBER: _____ (2) DATE OF REQUEST: _____
(3) SUBCONTRACTOR: _____ (4) NAME OF REQUESTER: _____
(5) PHONE NUMBER: _____
(6) FULL NAME OF RECEIVING ACCOUNT: _____
(7) SPECIFIC COMMAND USED TO CREATE TAPE: _____
(8) DISK SPACE REQUIRED TO LOAD TAPE: _____
(9) TAPE INFORMATION: _____
 (a) DENSITY: _____
 (b) IF COPY - TAPE LABEL: _____
 IF BACKUP - SAVESET NAME: _____
 IF OTHER - METHOD USED: _____
 BLOCKSIZE: _____
 RECORD LENGTH: _____
 BLOCKING FACTOR: _____
 CHARACTER MODE: _____
(10) ACCOUNT ON AF VAX TO BE NOTIFIED: _____
(11) DISPOSITION OF TAPE: _____
NOTES:

RESPONSE:

-
- DATE/TIME COMPLETED: _____ BY: _____
NUMBER OF FILES: _____ NUMBER OF BLOCKS: _____
NOTIFIED REQUESTER-TIME/DATE: _____
NOTES:

-
- (9) Enter the density of the tape (e.g., 1600 bpi).
If the tape was created using COPY, then enter
the tape label. If the tape was created using
BACKUP, then enter the saveset name. If the tape
was created using some other method, enter
- o Method used
 - o Blocksize
 - o Record length
 - o Blocking factor
 - o Character mode (EBCDIC/ASCII)
- (10) Enter the username of the account which should
be notified upon completion of this request.
- (11) Enter your choice for disposition of tape [e.g.,
return to requester (please list address),
scratch tape, store in tape archives until
specific date (please give date)].

- b. To have a tape made of information on the test bed, send a message, via VAX MAIL, to the SYSTEM account with the following information:
 - 1) List specific files to be copied to tape, including the drive, directory, subdirectory, and file names.
 - 2) Specify preference for procedure to be used to create the tape: BACKUP or COPY (default is BACKUP).
 - 3) Unless otherwise specified, a 1600 bpi tape will be created.
 - 4) Specify name and mailing address where tape should be shipped. Be sure to specify a street address since overnight carriers will not deliver to a post office box.

Step 3. Backup Procedures

In order to insure that all aspects of IISS can be recreated in the event of equipment failure, several backup procedures have been developed on the testbed. These procedures will copy files to tapes or disks, which are then stored appropriately at on and off-site locations.

- a. The daily incremental backup to tape (BACKUP.COM) is performed every morning to capture all file activity for the preceding day. A series of two weeks of these daily incrementals is kept in the tape archives. The system is available to all users during this backup procedure.
- b. The weekly image backup to disk is performed Thursday nights and takes 5-6 hours to complete. The procedure is to be run with no other users on the system, thus capturing all files and insuring file integrity. All five disks are backed-up to disks mounted on DRA1.
- c. The weekly incremental backup to tape is run Friday evening. Duration is determined by file activity during the previous week. This procedure captures all file activity for the preceding week. The system is available to all users during this backup procedure.
- d. The Configuration Management accounts are backed-up to tape on a weekly basis. The accounts SIISS, CMDB, and NIISS contain all of the source code necessary to rebuild IISS or recreate old IISS releases. A full backup of files in these accounts is put to tape, a log is created, and the log is sent to the system administrator for verification of successful completion.

Step 4. General Access Areas

The system access areas, as previously mentioned, contain products which have been loaded onto the test bed. This software is available for general use by all users of the system. Protections are set so all of the necessary executables, data, and symbols are available to all test bed users. The access areas include MCMM, IDSS, and PP&CS.

Step 5. ORACLE Database Administration

ORACLE version 5.1 is installed system-wide.

- a. For ORACLE installation procedures, refer to the ORACLE System Administrators Guide.
- b. Multiple Environment - Since there are many development areas for IISS, there should also be multiple database environments. Each IISS development/integration account should have an associated database environment to insure data integrity. Starting with IISS Release 2.0, all of the database environments exist under one group (063). Individual databases should be created (refer to the ORACLE System Administrators Manual), initialized and have data imported or entered in some manner. For subsequent IISS releases, it is the responsibility of the database administrator for the related IISS development area to keep the database current.
- c. User Access - Several group-wide logicals must be defined by the IISS development/integration account. Note that the assignment of these group logicals should never be made from the ORACLE database environment account. This will effect all database users in such a way that will cause all database activity to access and update the database environment specified in the group logical.

Step 6. Files

All accounts are created with the following feature: only five versions of any file will exist at a given time. This means that when the sixth version of a file is created, the earliest version of that file will automatically be deleted. All current users are aware of this feature.

Step 7. Helpful Hints For IISS

When IISS developers report strange results, check the following items for possible solutions.

- a. Verify that the user is running from an authorized IISS development/integration account.

- b. Verify that the user has sufficient disk quota. To run IISS, the user will need at least 12-15,000 Blocks of disk quota unused on their account.
- c. Verify that the database that the user is attempting to access has been warm-started and is running. By entering SHOW SYSTEM, the version of ORACLE should have four ORACLE\$ processes running. Check logicals to be certain they are pointing to the database environment that they should be accessing.
- d. To run the User Interface, verify that a file named (.;) exists containing only a carriage return.
- e. Verify that all logicals are pointing to the correct sub-directory for the necessary executables, forms, etc. Verify that the correct disk name is also specified.